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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Elias Bitar

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7590

08/10/2009

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EXAMINER

NGUYEN, CHUONG P

ART UNIT

PAPER NUMBER

3663

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,593	<b>Applicant(s)</b> BITAR ET AL.	
	<b>Examiner</b> Chuong P. Nguyen	<b>Art Unit</b> 3663	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 July 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 3-5, 8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6, 7 and 10-14 is/are rejected.
- 7) ☒ Claim(s) 1, 2, 6, 7, 11 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 September 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Applicants' 07/17/2009 Amendment, which directly amended claims 1-2, 6-7, 10-14; and traversed the rejection of the claims of the 12/19/2008 Office Action are acknowledged.

#### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the steps to perform the method as recited in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

Art Unit: 3663

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

3. Claims 1-2, 6-7, and 11-12 are objected to because of the following informalities:

Regarding claims 1-2, 6-7, and 11-12, the term “impassible” needs to be changed to “impassable”

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-2, 6-7, and 10-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 1, the “virtual, impassible obstacle” is not enabling. Unlike real impassable obstacles which can be detected, how is the virtual, impassible obstacle, which does not really exist, determined that would enable the system to perform all of the features that are disclosed and claimed? In addition, how does something not really exist can be determined?

What such determination is referenced to? In page 12, last paragraph of specification, Applicant

Art Unit: 3663

described that the virtual, impassible obstacle is associated with the craft and disposed with in its near neighborhood. However, near neighborhood of the craft could be front, rear, or sides of the craft; and the specification fails to describe how such determination is taken place. Therefore, the accuracy for the determination of the virtual, impassible obstacle is questionable.

Other claims are also rejected based on their dependency of the defected parent claim.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-2, 6-7, and 10, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Saban et al in view of Kimmel et al (IDS reference – 7,113,617).

Regarding claim 1, Saban et al disclose in Fig 8-18 a method for estimating, by a terrain navigational system of a moving vehicle with limited maneuverability, curvilinear distances to

Art Unit: 3663

be traversed by the vehicle from its instantaneous position to reach points of a travel region containing potential obstacles to be circumvented by said vehicle in order to establish a distance map covering the travel region wherein the curvilinear distance estimations of the distance map are obtained by means of a distance transform, the method comprising the steps of: providing a virtual, impassible obstacle (i.e. predict movement of obstacles) in addition to detected real impassible obstacles (col 8, lines 16-61; col 10, lines 14-67); arranging the virtual, impassible obstacle in a predetermined spatial position with respect to the vehicle (Fig 10, 15-16; col 8, line 62 – col 9, line 26; col 11, line 49 – col 12, line 21); moving the virtual, impassible obstacle in a predetermined relationship respect to the vehicle (Fig 10, 15-16; col 8, line 62 – col 9, line 26; col 11, line 49 – col 12, line 21); cataloging cells which are associated with the virtual, impassible obstacle that are inaccessible to the vehicle owing to its maneuverability limits (Fig 11-12; col 9, lines 27-66); forcing the distance transform to put aside, in its search for the lengths of the shortest paths, the paths that are out of range of the vehicle owing to its limited maneuverability (col 8, line 42 – col 10, line 67); and plotting a course which prohibits unrealistic vehicle turns based on the paths that are out of range of the vehicle owing to its limited maneuverability (Fig 18; col 12, lines 44-65). Saban et al do not explicitly disclose the step of cataloging cells is the distance map cells. Kimmel et al teach in the same field of endeavor in Fig 4-10 the step of cataloging distance map cells for identifying the object (col 8, line 2, col 14, line 45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate such step of cataloging distance map cells as taught by Kimmel et al in the method of Saban et al for determining identifying the object / obstacle since it has been held that if a technique has been used to improve one device, and a person of ordinary

Art Unit: 3663

skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill (MPEP 2143).

Regarding claims 2, 6-7, Saban et al disclose in Fig 10, 16 the virtual, impassible obstacle disposed in the neighborhood of the instantaneous position of the vehicle (col 9, line 7+; col 12, line 9+). Although Saban et al the shape of the virtual, impassible obstacle as claimed. However, such determination of the shape of the obstacle would be an obvious matter of design choice within the skill of the art.

Regarding claim 10, although Saban et al in view of Kimmel et al are silent as to the specifics of applying mathematical formula / equation for determining the contour of the additional obstacle and the distance map; however, applying any mathematical formula / equation, including that of the claimed invention, would have been an obvious design choice for one of ordinary skill in the art because it facilitates known mathematical means for deriving the contour of the additional obstacle and the distance map, as shown by Saban et al in view of Kimmel et al. Since the invention failed to provide novel or unexpected results from the usage of said claimed formula, use of any mathematical means, including that of the claimed invention, would be an obvious matter of design choice within the skill of the art. In addition, it is also well known in the art of experimentation that one derives his or her own formulation / equation to operate a system. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the mathematical formula / equation for determining the contour of the additional obstacle and the distance map in the method of Saban et al in view of Kimmel et al, since it is well known in the art to derive a mathematical formulation / equation to operate a system.

Art Unit: 3663

9. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saban et al in view of Kimmel et al as applied to claim 1 above, and further in view of Kameda et al.

Regarding claims 11-14, Saban et al in view of Kimmel et al disclose the invention except for the free angular sector as claimed. Kameda et al teach in the same field of endeavor in Fig 2-3 such free angular sector (i.e. angular velocity) (col 5, line 15 – col 6, line 34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate such free angular sector as taught by Kameda et al in the method of Saban et al in view of Kimmel et al for determining and providing collision avoidance for a craft since it has been held that if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill (MPEP 2143).

In addition, since it is also well known in the art of experimentation that one derives his or her own formulation / equation to operate a system. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the mathematical formula / equation for determining the free angular sector in the method of Saban et al in view of Kimmel et al, since it is well known in the art to derive a mathematical formulation / equation to operate a system.

10. While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).



***Response to Arguments***

11. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

12. The cited prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong P. Nguyen whose telephone number is 571-272-3445. The examiner can normally be reached on M-F, 8:00 - 5:00 PM EST.

Art Unit: 3663

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CN

/Jack W. Keith/  
Supervisory Patent Examiner, Art Unit 3663